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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): CXU-379

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on January 17, 2007

Signature: Margaret Giordani

Typed or printed name: Margaret Giordani

Application Number	Filed
10/722,142	November 24, 2003

First Named Inventor: Dan T. Simionescu

Art Unit	Examiner
1751	Preeti Kumar

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- ☑ attorney or agent of record. Registration number 50,244
- ☐ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

Signature

Christina L. Mangelsen, Patent Agent
Typed or printed name

864-271-1592
Telephone number

January 20, 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 1 forms are submitted.

PATENT

ATTORNEY DOCKET NO: CXU-379

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Simionescu, et al.	Examiner: Kumar, P.
Serial No: 10/722,142	Art Unit: 1751
Filed: November 24, 2003	Deposit Acct. No: 04-1403
Title: Fixation Method for Bioprosthesis	Confirmation No: 4675
	Customer No: 22827

Mail Stop AF
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

In conjunction with the filing of a Notice of Appeal, Appellants respectfully request review of the basis of the rejections of the pending claims of the above-captioned application. A Final Office Action dated September 21, 2006 has been issued.

In the Final Office Action, claims 22 and 25-27 were rejected under 35 U.S.C. §112, second paragraph. In the Amendment After Final, Appellants requested cancellation of pending claims 22 and 25-27. The Advisory Action dated December 26, 2006 states that claims 20-29 are pending and stand rejected. Appellants respectfully repeat the request for cancellation of claims 22 and 25-27. Entry of this cancellation renders this rejection moot.

In the Final Office Action, claims 20-21, 23-24 and 28 were rejected under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Adkisson (U.S. Patent No. 6,645,764).

Appellants respectfully submit that, Adkisson fails to disclose or suggest an implantable tissue comprising cross-linked elastin and further comprising a residue of a phenolic tannin cross-linking agent.

Adkisson discloses neocartilage compositions characterized by having multiple layers of cells surround by a substantially continuous insoluble glycosaminoglycan and collagen-enriched hyaline extra-cellular matrix (Abstract). The process for forming the neocartilage generally includes isolating chondrocytes, adhering the chondrocytes to a surface, replacing growth media containing serum with a serum-free growth media, and growing this culture to produce the neocartilage (col. 11, ll. 55-67).

Example 2 of Adkisson describes the biochemical assessment of neocartilage formed according to the process. Among the characterization methods, the tissue was stained metachromatically with pentachrome. Significantly, the pentachrome technique failed to identify elastic fibers (col. 16, ll. 27-30).

Example 2 also describes characterization of the tissue upon examination by Western analysis and transmission electron microscopy following tissue fixation. Results showed the inclusion of type VI collagen, type I collagen, type II collagen, type IX collagen and type XI collagen. No elastin is mentioned. The neocartilage tissue of Adkisson is described as containing collagen. The neocartilage tissue of Adkisson is not described as containing elastin.

The tissue fixation and staining techniques used for these characterizations is described at col. 6, ll. 1-5. Specifically, cultures were fixed with glutaraldehyde, post fixed with osmium-tetroxide, stained en-bloc with tannic acid and uranyl acetate, and ultra-thin sections were counter-stained routinely with uranyl acetate and lead citrate. Osmium-tetroxide and uranyl acetate are toxic. Even should a tissue treated according to the disclosed fixation and staining techniques contain elastin (though Appellant by no means suggests that the neocartilage tissue of Adkisson does contain elastin) the fixation and staining methods used by Adkisson would render the tissue unimplantable.

Example 4 of Adkisson describes in the paragraph beginning at column 18, line 13, neocartilage implants that were grown to day 30, fixed and stained for histological evaluation, and further extracted for analysis of cartilage specific macromolecules. As

previously mentioned, the fixation and staining processes used by Adkisson would render these tissues unimplantable, at least due to toxicity issues. Extraction involves electrophoresis of the material on a polyacrylamide gel under reduced conditions (see, e.g., Table III, end notes). This extraction process renders a tissue unimplantable.

Table III of Adkisson describes the results of these histological evaluations with regard to cartilage specific macromolecules. The neocartilage implants were found to contain type I collagen, type II collagen, type IX collagen, type XI collagen and Aggrecan. There is no suggestion that the neocartilage tissues contain elastin.

In the paragraph beginning at column 18, line 44, Adkisson describes sterile neocartilage implants that were grown to day 35-45 in vitro, cut to size, and sutured into an experimental defect of skeletally mature New Zealand White rabbits. It is not physically possible that the neocartilage implants that were implanted in the New Zealand White rabbits are the same materials that were fixed, stained, and extracted for histological evaluation. With regard to any possibility of implantation, the 'implants' that were histologically evaluated and described in the previous paragraphs were destroyed during the evaluation process.

There is no teaching or suggestion that the neocartilage compositions disclosed by Adkisson contain elastin. Moreover, the neocartilage compositions of Adkisson that actually are implantable have not been fixed, stained or extracted. Thus, the neocartilage compositions of Adkisson that are implantable have not been treated with tannic acid and do not include a residue of a phenolic tannin, as do the implantable tissues of the pending claims.

Appellant respectfully maintains that the pending claims patentably define over Adkisson and request withdrawal of the rejection.

In the Final Office Action, claims 20-24 and 28-29 were rejected under 35 U.S.C. §102(b) and anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Nimni, et al. (U.S. Patent No. 5,374,539).

Appellants respectfully submit that, Nimni, et al. fails to disclose or suggest an implantable tissue comprising cross-linked elastin and further comprising a residue of a phenolic tannin cross-linking agent.

Nimni, et al. is directed to a method for preparing a purified collagen network. The method includes subjecting tissue to proteolytic enzymes in the presence of salt to remove not only the non-helical extensions at either end of a collagen molecule, but also cellular proteins, interfibrillar proteins, glycoproteins, residual serum proteins, and other extraneous material leaving behind the helical region of collagen (col. 3, l. 56 – col. 4, l. 10). Specifically, Nimni, et al. describes methods of preparing purified collagen (see, e.g., the section beginning at col. 4, l. 55) and methods of preparing purified collagen scaffolds (the section beginning at col. 5, l. 16) through the enzymatic digestion of non-collagenous remnants of the starting materials (see, e.g., claim 1).

Nimni, et al. teaches the removal of non-collagenous materials during formation of the purified collagen or purified collagen scaffolds. Subsequent to the formation of the purified collagen configuration, the remaining collagen can be crosslinked (col. 6, ll. 7-15). Thus, the implantable cross-linked material of Nimni, et al. is a purified collagen product from which non-collagenous impurities have been removed. Nimni, et al. fails to disclose or suggest an implantable tissue including cross-linked elastin, as is found in the implantable tissues of the pending claims. Accordingly, Appellants respectfully submit that Nimni, et al. fails to disclose or suggest features of the pending claims and request withdrawal of the rejection and allowance of the claims.

Appellants believe that the present application is in condition for allowance and favorable action, therefore, is respectfully requested. Examiner Preeti is invited and encouraged to telephone the undersigned, however, should any issues remain after consideration of this Request.

Please charge any additional fees required by this Request to Deposit Account No. 04-1403.

Respectfully submitted,

DORITY & MANNING, P.A.

1/17/07
Date

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